

J. Wengel et al.
U.S.S.N. 09/152,059
Page 15

SUB
95
D4
COO4
206. (amended) The kit of claim 205 wherein the one or more oligonucleotides are immobilized on the reaction body.

207. (amended) A diagnostic or analysis kit comprising a reaction body and one or more oligonucleotides of claim 193.

208. (amended) The kit of claim 207 wherein the one or more oligonucleotides are immobilized on the reaction body.

REMARKS

Applicants note that none of the claims have been rejected over prior art under 35 U.S.C. 102 or 103. No rejections under 35 U.S.C. 102 or 103 have been made during the prosecution of this application.

The specification and claims 142-186, 189, 190, 193 and 195-208 have been amended, and non-elected claims 187, 191 and 194 have been cancelled without prejudice. No new matter has been added. Indeed, the amendments are non-substantive and merely correct dependencies.

It is also believed the amendments may be properly entered at this time, i.e. after final rejection, pursuant to 37 CFR 1.116 because the amendments do not raise new issues or require a new search. As mentioned above, the amendments are non-substantive and merely correct claim dependencies. Entry of the amendments at this time is solicited.

With regards to the Restriction imposed at page 3 of the Office Action, it is believed the presently pending claims are within the scope of the elected Group of the original Restriction. Monomer claims 187, 191 and 194 have been cancelled without prejudice.

J. Wengel et al.
U.S.S.N. 09/152,059
Page 16

The priority claim on page 1 of the specification has amended as requested at pages 3-4 of the Office Action.

Claims 29 and 141-186 were provisionally rejected under the doctrine of obviousness-type double patenting over claims 76-100 and 109-118 of copending application 09/528,110.

This provisional rejection can be properly withdrawn if it is the only outstanding rejection in the case. See Section 804 of the Manual of Patenting Examining Procedure.

Additionally, the cited claims of copending application 09/528,110 recite an inversion of the C3 stereocentre in the sugar unit, i.e. the compounds are *xylo*-configured LNA.

In view thereof, reconsideration and withdrawal of the rejection are requested.

The Office Action further indicates that claims 29 and 141-186 are directed to an invention "that is not patentably distinct from claims 76-100 and 109-118 of commonly assigned copending application 09/528,110. The Office Action further indicates that the issue of priority under 35 USC §102(g) and possibly 35 USC §102(f) of this single invention must be resolved. See paragraph 4 of the Office Action.

Those statements are traversed.

Respectfully, any rejection under 35 USC §102(g) and possibly 35 USC §102(f) is improper.

J. Wengel et al.
U.S.S.N. 09/152,059
Page 17

Additionally, the cited application has common inventorship (Jesper Wengel common inventor) and ownership with the present application. Enclosed herewith are copies of the USPTO recorded Assignment of the cited application and the present application, indicating both applications are owned by Exiqon A/S.

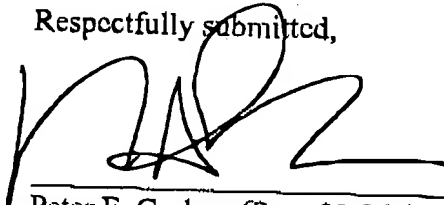
Moreover, while Applicants fully disagree with the statements, the above comments in traversal of the obviousness-type double patenting rejection are repeated here.

Claims 29 and 142-186 were rejected under 35 U.S.C. 112, second paragraph on grounds that those claims are dependent on cancelled claims.

It is believed the amendments made herein obviate this formalities-type rejection. In view thereof, reconsideration and withdrawal of the rejection are requested.

It is believed the application is in condition for immediate allowance, which action is earnestly solicited.

Respectfully submitted,

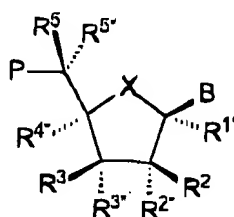


Peter F. Corless (Reg. 33,860)
EDWARDS & ANGELL, LLP
Dike, Bronstein, Roberts & Cushman IP Group
130 Water Street
Boston, Massachusetts 02109
(617) 523-3400

J. Wengel et al.
 U.S.S.N. 09/152,059
 Page 18

MARKED VERSION TO SHOW CHANGES

142. (amended) An oligomer of claim [140] 141 wherein R^2 , R^{2*} , R^3 , and R^{3*} not designating P^* each designates a biradical consisting of 1-8 groups or atoms selected from - $C(R^a R^b)-$, $-C(R^a)=C(R^a)-$, $-O-$, and $>C=Z$.
143. (amended) An oligomer of claim [140] 141 wherein the one or two pairs of non-geminal substituents, constituting one or two biradical(s), respectively, are selected from the present substituents of R^{1*} , R^{4*} , R^6 , R^{6*} , R^7 , R^{7*} , R^{N*} , and the ones of R^2 , R^{2*} , R^3 , and R^{3*} not designating P^* .
144. (amended) An oligomer of claim [140] 141 wherein the oligomer comprises 1 to 10000 nucleosides of the formula I and 0-10000 nucleosides selected from naturally occurring nucleosides and nucleoside analogues, with the proviso that the sum of the number of nucleosides and the number of LNA(s) is at least 2.
145. (amended) An oligomer of claim [143] 144 wherein at least one LNA nucleoside comprises a nucleobase as the substituent B.
146. (amended) An oligomer of claim [140] 141 wherein one of the substituents R^1 and R^{1*} designates P^* .
147. (amended) An oligomer of [140] 141 wherein one or more nucleosides have the following formula Ia



Ia

J. Wengel et al.
U.S.S.N. 09/152,059
Page 19

wherein P, P*, B, X, R^{1*}, R^{2*}, R^{3*}, R^{4*}, R^{5*}, and R^{6*} are as defined in claim 141.

148. (amended) An oligomer of claim [146] 147 wherein R^{3*} designates P*.

149. (amended) An oligomer of claim [146] 148 wherein the oligomer comprises one biradical constituted by two non-geminal substituents.

150. (amended) An oligomer of claim [140] 141 wherein X is selected from - (CR^{6*}R^{6*})-, -O-, -S-, and -N(R^{N*})-.

151. (amended) An oligomer of claim [140] 141 wherein the biradical(s) constituted by pair(s) of non-geminal substituents is/are selected from -(CR^{r*}R^{s*})-_r-O-(CR^{r*}R^{s*})-_s-, -(CR^{r*}R^{s*})-_r-O-(CR^{r*}R^{s*})-_s-O-, -O-(CR^{r*}R^{s*})-_{r+s}-O-, -O-(CR^{r*}R^{s*})-_r-O-(CR^{r*}R^{s*})-_s-, and -O-, wherein each R^{*} is independently selected from hydrogen, halogen, azido, cyano, nitro, hydroxy, mercapto, amino, mono- or di(C₁₋₆-alkyl)amino, optionally substituted C₁₋₆-alkoxy, optionally substituted C₁₋₆-alkyl, DNA intercalators, photochemically active groups, thermochemically active groups, chelating groups, reporter groups, and ligands, and/or two adjacent (non-geminal) R^{*} may together designate a double bond, and each of r and s is 0-4 with the proviso that the sum r+s is 1-5.

152. (amended) An oligomer of claim [150] 151 wherein each biradical is independently selected from -O-, -(CR^{r*}R^{s*})-_r-O-(CR^{r*}R^{s*})-_s-, and -O-(CR^{r*}R^{s*})-_{r+s}-O-, wherein and each of r and s is 0-3 with the proviso that the sum r+s is 1-4.

153. (amended) An oligomer of claim [140] 141 wherein one of the following criteria applies for at least one LNA nucleoside:

J. Wengel et al.
 U.S.S.N. 09/152,059
 Page 20

- (viii) R^{2*} and R^{4*} together designate a biradical selected from $-O-$, $-(CR^*R^*)_r-O-(CR^*R^*)_s-$, $O-(CR^*R^*)_{r+s}-O-$, $-S-(CR^*R^*)_{r+s}-O-$, $-O-(CR^*R^*)_{r+s}-S-$, $-N(R^*)-(CR^*R^*)_{r+s}-O-$, and $-O-(CR^*R^*)_{r+s}-N(R^*)-$;
- (ix) R^2 and R^3 together designate a biradical selected from $-O-$ and $-(CR^*R^*)_r-O-(CR^*R^*)_s-$;
- (x) R^{2*} and R^3 together designate a biradical selected from $-O-$ and $-(CR^*R^*)_r-O-(CR^*R^*)_s-$;
- (xi) R^3 and R^{4*} together designate a biradical of $-(CR^*R^*)_r-O-(CR^*R^*)_s-$;
- (xii) R^3 and R^5 together designate a biradical of $-(CR^*R^*)_r-O-(CR^*R^*)_s-$; or
- (xiii) R^{1*} and R^{4*} together designate a biradical of $-(CR^*R^*)_r-O-(CR^*R^*)_s-$;
- (xiv) R^{1*} and R^{2*} together designate a biradical of $-(CR^*R^*)_r-O-(CR^*R^*)_s-$;

wherein each of r and s is 0-3 with the proviso that the sum $r+s$ is 1-4, and where X is selected from $-O-$, $-S-$, and $-N(R^{II})-$ where R^{II} designates hydrogen or C_{1-4} -alkyl.

154. (amended) An oligomer of claim [152] 153 wherein R^{3*} designates P^* .

155. (amended) An oligomer of claim [153] 154 wherein R^{2*} and R^{4*} together designate a biradical.

156. (amended) An oligomer of claim [154] 155 wherein X is O , R^2 is selected from hydrogen, hydroxy, and optionally substituted C_{1-6} -alkoxy, and R^{1*} , R^3 , R^5 , and R^{5*} designate hydrogen.

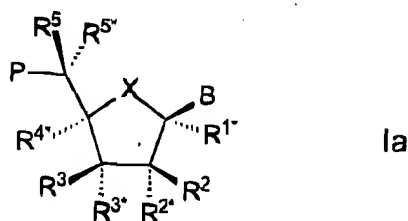
157. (amended) An oligomer of claim [155] 156 wherein the biradical is selected from $-O-$ and $-(CH_2)_{0-1}-O-(CH_2)_{1-3}-$.

J. Wengel et al.
U.S.S.N. 09/152,059
Page 21

158. (amended) An oligomer of claim [156] 157 wherein the biradical is $-O-CH_2-$.
159. (amended) An oligomer of claim [154] 155 wherein B is selected from nucleobases.
160. (amended) An oligomer of claim [158] 159 wherein the oligomer comprises at least one LNA nucleoside wherein B is selected from adenine and guanine and at least one LNA nucleoside wherein B is selected from thymine, cytosine and urasil.
161. (amended) An oligomer of claim [153] 154 wherein R^2 and R^3 together designate a biradical.
162. (amended) An oligomer of claim [160] 161 wherein X is O, R^{2*} is selected from hydrogen, hydroxy, and optionally substituted C_{1-6} -alkoxy, and R^{1*} , R^{4*} , R^5 , and R^{5*} designate hydrogen.
163. (amended) An oligomer of claim [161] 162 wherein the biradical is $-(CH_2)_{0-1}-O-(CH_2)_{1-3}-$.
164. (amended) An oligomer of claim [153] 154 wherein one R^* is selected from hydrogen, hydroxy, optionally substituted C_{1-6} -alkoxy, optionally substituted C_{1-6} -alkyl, DNA intercalators, photochemically active groups, thermochemically active groups, chelating groups, reporter groups, and ligands, and any remaining substituents R^* are hydrogen.
165. (amended) An oligomer of claim [153] 154 wherein a group R^* in the biradical of at least one LNA nucleoside is selected from DNA intercalators, photochemically active groups, thermochemically active groups, chelating groups, reporter groups, and ligands.

J. Wengel et al.
U.S.S.N. 09/152,059
Page 22

166. (amended) An oligomer according to claim [153] 154 wherein one or more LNA nucleosides correspond to the formula Ia:



wherein X is -O-;

B is selected from nucleobases, DNA intercalators, photochemically active groups, thermochemically active groups, chelating groups, reporter groups, and ligands;

P designates the radical position for an internucleoside linkage to a succeeding monomer, or a 5'-terminal group, such internucleoside linkage or 5'-terminal group optionally including the substituent R⁵;

R^{3*} is a group P* which designates an internucleoside linkage to a preceding monomer, or a 3'-terminal group;

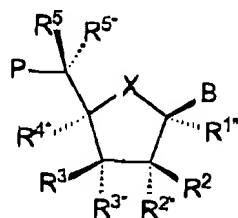
R^{3*} and R^{4*} together designate a biradical selected from -O-, -(CR^{*}R^{*})_r-O-(CR^{*}R^{*})_s- and -O-; wherein each R^{*} is independently selected from hydrogen, halogen, azido, cyano, nitro, hydroxy, mercapto, amino, mono- or di(C₁₋₆-alkyl)amino, optionally substituted C₁₋₆-alkoxy, optionally substituted C₁₋₆-alkyl, DNA intercalators, photochemically active groups, thermochemically active groups, chelating groups, reporter groups, and ligands, and/or two adjacent (non-geminal) R^{*} may together designate a double bond, and each of r and s is 0-3 with the proviso that the sum r+s is 1-4; each of the substituents R^{1*}, R², R³, R⁵, and R^{5*} is independently selected from hydrogen, optionally substituted C₁₋₆-alkyl, optionally substituted C₂₋₆-alkenyl, hydroxy, C₁₋₆-

J. Wengel et al.
 U.S.S.N. 09/152,059
 Page 23

alkoxy, C₂₋₆-alkenyloxy, carboxy, C₁₋₆-alkoxycarbonyl, C₁₋₆-alkylcarbonyl, formyl, amino, mono- and di(C₁₋₆-alkyl)amino, carbamoyl, mono- and di(C₁₋₆-alkyl)-amino-carbonyl, C₁₋₆-alkyl-carbonylamino, carbamido, azido, C₁₋₆-alkanoyloxy, sulphonyl, C₁₋₆-alkylthio, DNA intercalators, photochemically active groups, thermochemically active groups, chelating groups, reporter groups, and ligands, and halogen, where two geminal substituents together may designate oxo;

and basic salts and acid addition salts thereof.

167. (amended) An oligomer of claim [140] 141 wherein one or more LNA nucleosides correspond to the formula Ia:



Ia

wherein X is -O-;

B is selected from nucleobases, DNA intercalators, photochemically active groups, thermochemically active groups, chelating groups, reporter groups, and ligands;

P designates the radical position for an internucleoside linkage to a succeeding monomer, or a 5'-terminal group, such internucleoside linkage or 5'-terminal group optionally including the substituent R⁵;

R^{3'} is a group P* which designates an internucleoside linkage to a preceding monomer, or a 3'-terminal group;

J. Wengel et al.
U.S.S.N. 09/152,059
Page 24

R^{2*} and R^{4*} together designate a biradical selected from $-(CR^*R^*)_r-O-(CR^*R^*)_s-$ and $-O-$, wherein each R^* is independently selected from hydrogen, halogen, azido, cyano, nitro, hydroxy, mercapto, amino, mono- or di(C_{1-6} -alkyl)amino, optionally substituted C_{1-6} -alkoxy, optionally substituted C_{1-6} -alkyl, DNA intercalators, photochemically active groups, thermochemically active groups, chelating groups, reporter groups, and ligands, and/or two adjacent (non-geminal) R^* may together designate a double bond, and each of r and s is 0-3 with the proviso that the sum $r+s$ is 1-4; each of the substituents R^{1*} , R^2 , R^3 , R^5 , and R^{5*} is independently selected from hydrogen, optionally substituted C_{1-6} -alkyl, optionally substituted C_{2-6} -alkenyl, hydroxy, C_{1-6} -alkoxy, C_{2-6} -alkenyloxy, carboxy, C_{1-6} -alkoxycarbonyl, C_{1-6} -alkylcarbonyl, formyl, amino, mono- and di(C_{1-6} -alkyl)amino, carbamoyl, mono- and di(C_{1-6} -alkyl)-amino-carbonyl, C_{1-6} -alkyl-carbonylamino, carbamido, azido, C_{1-6} -alkanoyloxy, sulphonyl, sulphanyl, C_{1-6} -alkylthio, DNA intercalators, photochemically active groups, thermochemically active groups, chelating groups, reporter groups, and ligands, and halogen, where two geminal substituents together may designate oxo;

and basic salts and acid addition salts thereof.

168. (amended) An oligomer of claim [166] 167 wherein one R^* is selected from hydrogen, hydroxy, optionally substituted C_{1-6} -alkoxy, optionally substituted C_{1-6} -alkyl, DNA intercalators, photochemically active groups, thermochemically active groups, chelating groups, reporter groups, and ligands, and any remaining substituents R^* are hydrogen.

169. (amended) An oligomer of claim [166] 167 wherein the biradical is selected from $-O-$ or $-(CH_2)_{0-1}-O-(CH_2)_{1-3}-$.

170. (amended) An oligomer of claim [166] 167 wherein B is selected from nucleobases.

J. Wengel et al.
 U.S.S.N. 09/152,059
 Page 25

171. (amended) An oligomer of claim [169] 170 wherein the oligomer comprises at least one LNA nucleoside wherein B is selected from adenine and guanine and at least one LNA nucleoside wherein B is selected from thymine, cytosine and uracil.

172. (amended) An oligomer of claim [166] 167 wherein R^2 is selected from hydrogen, hydroxy and optionally substituted C_{1-6} -alkoxy, and R^{1*} , R^3 , R^5 , and R^{6*} designate hydrogen.

173. (amended) An oligomer according to claim [140] 141 wherein any internucleoside linkage of the one or more LNA nucleosides is selected from linkages consisting of 2 to 4 groups/atoms selected from $-CH_2-$, $-O-$, $-S-$, $-NR^{II}-$, $>C=O$, $>C=NR^{II}-$, $>C=S$, $-Si(R^{II})_2-$, $-SO-$, $-S(O)_2-$, $-P(O)_2-$, $-P(O,S)-$, $-P(S)_2-$, $-PO(R^{II})-$, $-PO(OCH_3)-$, and $-PO(NHR^H)-$, where R^{II} is selected from hydrogen and C_{1-4} -alkyl, and R^H is selected from C_{1-6} -alkyl and phenyl.

174. (amended) An oligomer of claim [172] 173 wherein any internucleoside linkage of the one or more LNA nucleosides is selected from $-CH_2-CH_2-CH_2-$, $-CH_2-CO-CH_2-$, $-CH_2-CHOH-CH_2-$, $-O-CH_2-O-$, $-O-CH_2-CH_2-$, $-O-CH_2-CH=$, $-CH_2-CH_2-O-$, $-NR^H-CH_2-CH_2-$, $-CH_2-CH_2-NR^{II}-$, $-CH_2-NR^{II}-CH_2-$, $-O-CH_2-CH_2-NR^H-$, $-NR^{II}-CO-O-$, $-NR^{II}-CO-NR^H-$, $-NR^{II}-CS-NR^H-$, $-NR^H-C(=NR^H)-NR^H-$, $-NR^H-CO-CH_2-NR^H-$, $-O-CO-O-$, $-O-CO-CH_2-O-$, $-O-CH_2-CO-O-$, $-CH_2-CO-NR^{II}-$, $-O-CO-NR^{II}-$, $-NR^H-CO-CH_2-$, $-O-CH_2-CO-NR^{II}-$, $-O-CH_2-CH_2-NR^{II}-$, $-CH=N-O-$, $-CH_2-NR^H-O-$, $-CH_2-O-N=$, $-CH_2-O-NR^{II}-$, $-CO-NR^H-CH_2-$, $-CH_2-NR^H-O-$, $-CH_2-NR^{II}-CO-$, $-O-NR^H-CH_2-$, $-O-NR^{II}-$, $-O-CH_2-S-$, $-S-CH_2-O-$, $-CH_2-CH_2-S-$, $-O-CH_2-CH_2-S-$, $-S-CH_2-CH=$, $-S-CH_2-CH_2-$, $-S-CH_2-CH_2-O-$, $-S-CH_2-CH_2-S-$, $-CH_2-S-CH_2-$, $-CH_2-SO-CH_2-$, $-CH_2-SO_2-CH_2-$, $-O-SO-O-$, $-O-S(O)_2-O-$, $-O-S(O)_2-CH_2-$, $-O-S(O)_2-NR^H-$, $-NR^H-S(O)_2-CH_2-$, $-O-S(O)_2-CH_2-$, $-O-P(O)_2-O-$, $-O-P(O,S)-O-$, $-O-P(S)_2-O-$, $-S-P(O)_2-O-$, $-S-P(O,S)-O-$, $-S-P(S)_2-O-$, $-O-P(O)_2-S-$, $-O-P(O,S)-S-$, $-O-P(S)_2-S-$, $-S-P(O)_2-S-$, $-S-P(O,S)-S-$, $-S-P(S)_2-S-$, $-O-PO(R^{II})-O-$, $-O-PO(OCH_3)-O-$, $-O-PO(BH_3)-O-$, $-O-PO(NHR^N)-O-$, $-O-P(O)_2-NR^H-$, $-NR^{II}-P(O)_2-O-$, $-O-P(O,NR^{II})-O-$, and $-O-Si(R^{II})_2-O-$.

J. Wengel et al.
U.S.S.N. 09/152,059
Page 26

175. (amended) An oligomer of claim [173] 174 wherein any internucleoside linkage of the one or more LNA nucleosides is selected from $-\text{CH}_2-\text{CO}-\text{NR}^{\text{H}}-$, $-\text{CH}_2-\text{NR}^{\text{H}}-\text{O}-$, $-\text{S}-\text{CH}_2-\text{O}-$, $-\text{O}-\text{P}(\text{O})_2-\text{O}-$, $-\text{O}-\text{P}(\text{O},\text{S})-\text{O}-$, $-\text{O}-\text{P}(\text{S})_2-\text{O}-$, $-\text{NR}^{\text{H}}-\text{P}(\text{O})_2-\text{O}-$, $-\text{O}-\text{P}(\text{O},\text{NR}^{\text{H}})-\text{O}-$, $-\text{O}-\text{PO}(\text{R}^{\text{H}})-\text{O}-$, $-\text{O}-\text{PO}(\text{CH}_3)-\text{O}-$, and $-\text{O}-\text{PO}(\text{NHR}^{\text{H}})-\text{O}-$, where R^{H} is selected from hydrogen and C_{1-4} -alkyl, and R^{H} is selected from C_{1-6} -alkyl and phenyl.

176. (amended) An oligomer of claim [140] 141 wherein each of the substituents R^1 , R^2 , R^{2*} , R^3 , R^{3*} , R^4 , R^5 , R^{5*} , R^6 , R^{6*} , R^7 , and R^{7*} of the one or more LNA nucleosides, which are present and not involved in P, P^* or the biradical(s), is independently selected from hydrogen, optionally substituted C_{1-6} -alkyl, optionally substituted C_{2-6} -alkenyl, hydroxy, C_{1-6} -alkoxy, C_{2-6} -alkenyloxy, carboxy, C_{1-6} -alkoxycarbonyl, C_{1-6} -alkylcarbonyl, formyl, amino, mono- and di(C_{1-6} -alkyl)amino, carbamoyl, mono- and di(C_{1-6} -alkyl)-amino-carbonyl, C_{1-6} -alkyl-carbonylamino, carbamido, azido, C_{1-6} -alkanoyloxy, sulphonyl, sulphonyl, C_{1-6} -alkylthio, DNA intercalators, photochemically active groups, thermochemically active groups, chelating groups, reporter groups, and ligands, and halogen, where two geminal substituents together may designate oxo, and where R^{H} , when present and not involved in a biradical, is selected from hydrogen and C_{1-4} -alkyl.

177. (amended) An oligomer of claim [140] 141 wherein X is selected from $-\text{O}-$, $-\text{S}-$, and $-\text{NR}^{\text{H}}-$, and each of the substituents R^1 , R^2 , R^{2*} , R^3 , R^{3*} , R^4 , R^5 , R^{5*} , R^6 , R^{6*} , R^7 , and R^{7*} of the LNA(s), which are present and not involved in P, P^* or the biradical(s), designate hydrogen.

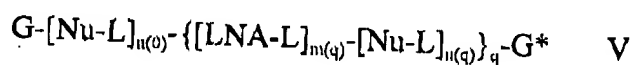
178. (amended) An oligomer of claim [140] 141 wherein P is a 5'-terminal group selected from hydrogen, hydroxy, optionally substituted C_{1-6} -alkyl, optionally substituted C_{1-6} -alkoxy, optionally substituted C_{1-6} -alkylcarbonyloxy, optionally substituted aryloxy, monophosphate, diphosphate, triphosphate, and $-\text{W}-\text{A}'$, wherein W is selected from $-\text{O}-$, $-\text{S}-$, and

J. Wengel et al.
 U.S.S.N. 09/152,059
 Page 27

-N(R^H)- where R^H is selected from hydrogen and C₁₋₆-alkyl, and where A' is selected from DNA intercalators, photochemically active groups, thermochemically active groups, chelating groups, reporter groups, and ligands.

179. (amended) An oligomer of claim [140] 141 wherein P* is a 3'-terminal group selected from hydrogen, hydroxy, optionally substituted C₁₋₆-alkoxy, optionally substituted C₁₋₆-alkylcarbonyloxy, optionally substituted aryloxy, and -W-A', wherein W is selected from -O-, -S-, and -N(R^H)- where R^H is selected from hydrogen and C₁₋₆-alkyl, and where A' is selected from DNA intercalators, photochemically active groups, thermochemically active groups, chelating groups, reporter groups, and ligands.

180. (amended) An oligomer of claim [140] 141 wherein the oligomer corresponds to the following formula V:



wherein

q is 1-50;

each of n(0), ..., n(q) is independently 0-10000;

each of m(1), ..., m(q) is independently 1-10000;

with the proviso that the sum of n(0), ..., n(q) and m(1), ..., m(q) is 2-15000;

G designates a 5'-terminal group;

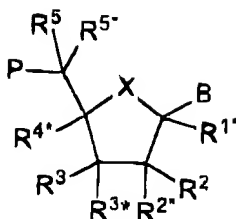
each Nu independently designates a nucleoside selected from naturally occurring nucleosides and nucleoside analogues;

each LNA independently designates a nucleoside analogue;

each L independently designates an internucleoside linkage between two groups selected from Nu and LNA, or L together with G* designates a 3'-terminal group; and

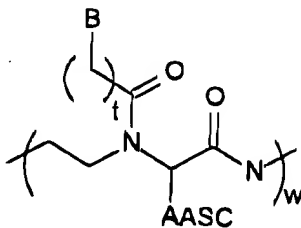
each LNA-L independently designates a nucleoside analogue of the general formula I:

J. Wengel et al.
U.S.S.N. 09/152,059
Page 28



wherein the substituents B, P, P*, R^{1*}, R², R^{2*}, R³, R^{4*}, R⁵, and R^{5*}, and X are as defined in claim [140] 141.

181. (amended) An oligomer of claim [140] 141 further comprising a PNA mono- or oligomer segment of the formula



wherein B is as defined above for the formula I, AASC designates hydrogen or an amino acid side chain, t is 1-5, and w is 1-50.

182. (amended) An oligomer of claim [140] 141 which has an increased specificity towards complementary ssRNA or ssDNA compared to a corresponding reference oligonucleotide which does not contain any LNA units.

183. (amended) An oligomer of claim [140] 141 which has an increased affinity towards complementary ssRNA or ssDNA compared to a corresponding reference oligonucleotide which does not contain any LNA units.

184. (amended) An oligomer of claim [140] 141 which is capable of binding to a target sequence in a dsDNA or dsRNA molecule by of strand displacement or by triple helix

J. Wengel et al.
U.S.S.N. 09/152,059
Page 29

formation.

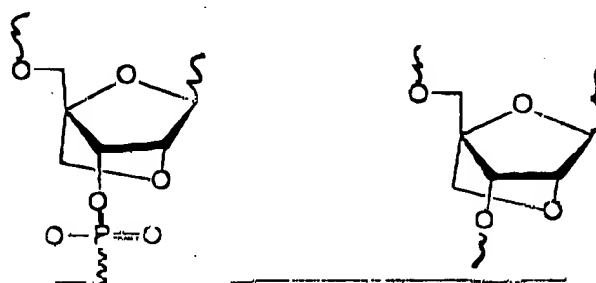
185. (amended) An oligomer of claim [140] 141 which is more resistant to nucleases than a corresponding reference oligonucleotide which does not contain any LNA units.

186. (amended) An oligomer according to claim [140] 141 which has nucleic acid catalytic activity.

189. (amended) A diagnostic or analysis kit comprising an oligonucleotide of claim [187] 188.

190. (amended) A kit of claim [188] 189 wherein the oligonucleotide is immobilized on a solid support.

193. (amended) An oligonucleotide [A nucleic acid compound] comprising one or more of the following groups:



wherein the wavy lines indicates optional substitution.

195. (amended) A diagnostic or analysis kit comprising an oligonucleotide of claim [191] 193.

196. (amended) A kit of claim [194] 195 wherein the oligonucleotide is immobilized on a solid support.

J. Wengel et al.
U.S.S.N. 09/152,059
Page 30

197. (amended) A diagnostic or analysis kit comprising a reaction body and one or more oligonucleotides of claim [140] 141.

198. (amended) The kit of claim [196] 197 wherein the one or more oligonucleotides are immobilized on the reaction body.

199. (amended) A diagnostic or analysis kit comprising a reaction body and one or more oligonucleotides of claim [146] 147.

200. (amended) The kit of claim [198] 199 wherein the one or more oligonucleotides are immobilized on the reaction body.

201. (amended) A diagnostic or analysis kit comprising a reaction body and one or more oligonucleotides of claim [156] 157.

202. (amended) The kit of claim [200] 201 wherein the one or more oligonucleotides are immobilized on the reaction body.

203. (amended) A diagnostic or analysis kit comprising a reaction body and one or more oligonucleotides of claim [165] 166.

204. (amended) The kit of claim [202] 203 wherein the one or more oligonucleotides are immobilized on the reaction body.

205. (amended) A diagnostic or analysis kit comprising a reaction body and one or more oligonucleotides of claim [166] 167.

J. Wengel et al.
U.S.S.N. 09/152,059
Page 31

206. (amended) The kit of claim [204] 205 wherein the one or more oligonucleotides are immobilized on the reaction body.

207. (amended) A diagnostic or analysis kit comprising a reaction body and one or more oligonucleotides of claim [192] 193.

208. (amended) The kit of claim [206] 207 wherein the one or more oligonucleotides are immobilized on the reaction body.